



## AntiLog V4.1 User Guide Supplement

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You have been supplied with an early development release of the V4.1 AntiLog embedded software as part of our continued product development programme. This supplement lists the significant changes introduced since V4.0.

*[Please note that the feature set for V4.1 has not been frozen at this time. Anticyclone Systems Ltd reserves the right to modify features and unit operation before V4.1 is formally released]*

### 1 Media Extraction Event Processing

Removing the media from a unit while the menu system is active will now update the terminal menu. For example, removing the media will now show that FLASH media is not installed any more. Although this menu output would have been displayed in V4.0 if no media was present and a menu refresh was requested, it did not automatically appear when media was removed in playback mode. Inserting media still automatically updates the menu as it did in V4.0.

```
AntiLog-MR 4.1, Serial number ASL/16/3605

(!! FLASH media not present !!)
(PLAYBACK mode. Data transfer and 'On' button aware)

<S> Start playback now (or use 'On' button)
<R> Recording options
<P> Playback options
<G> General options
<L> Lock user options
<B> Battery check
<A> About AntiLog
<U> Shut down
?
?
```

### 2 NOLOG option

A customer specific option is now available for secure equipment initialisation (The NOLOG 'N' Option). This option allows an AntiLog unit to be used in an application which requires equipment to be initialised in the field using AntiLog's built in user command system without the requirement to insert media to collect recorded data. As no media is required, the unit will operate continuously and can be used in secure situations where the data the equipment transmits could otherwise be considered sensitive if it were recorded.

### 3 AntiLog Command Line

V4.1 supports the new ACL command line interface. This interface allows communication between single or multiple units connected together on a common serial port bus using a simple text based command language. All commands start with the '#' character, contain only ASCII characters and optionally end with a checksum sequence. The command language can be selected to operate from any available AntiLog serial port and can even share input and output with the standard menu system when required.

[ACL detail and ICD reference to be inserted here]

### 4 CR LF detection for menu system

The menu system now automatically detects whether you are using a terminal application that outputs carriage return (<CR>) or line feed (<LF>) or both in response to pressing the ENTER key in your terminal application. For example, this new feature now prevents unwanted menu refreshes caused by terminal programs that output both <CR> and <LF> each time the terminal application keyboard ENTER key is pressed.

## 5 Ring Buffer Storage

AntiLog V4.1 now supports a 'Ring Buffer' storage method. In normal operation, collected data is written to the FLASH media store unit until it is full and then logging stops. This is important for critical data collection because with this storage method, no previously recorded data can ever get overwritten, so for example, accidentally switching a unit on and filling it up will never overwrite what has already been recorded on a unit. The only way to delete previously recorded data is to actively delete it in the playback mode.

With the new ring buffer storage feature enabled, you define the total storage volume you would like to use for a media ring buffer and AntiLog will maintain the most recent data but will overwrite (discard) the oldest so that the total collected data still fits into the allocated media space. This storage method is ideal when you want to capture an event from your source equipment which may only occur very rarely. Instead of using a very large media storage option to record everything so you can capture the event, you can select the ring buffer storage method with a suitable ring size to ensure you capture the event and then if the event is detected, you have a record of the logged data leading up to the event without having to download and process very large quantities of data. A new "Media write options" item in the 'Recording Options' menu allows you to select the media writing method for a given task and it shows which method is currently active.

### Recording Options

```
--- Dual channel data logging
: :
<P> Configure serial port (230400,8,N,1,-)
: :
*[A] Record all data
<N> Record filtered GPS NMEA
<M> Record ICD-GPS-15x
<S> ASCII line sub sample filter
: :
<T> Enable time stamping
<X> Define ASCII end of line character
<B> Define 'On' and 'Off' button actions
<F> Polled user equipment commands and functions (1000 mS)
: :
<W> Media write options (Normal write method active)
<U> User equipment command management
: :
*[L] Panel LEDs enabled
<E> Erase all recorded data
<R> Record data now
<Esc>
?
```

Select <W> item to open the 'Media Write Options' menu allows to select the normal logging method, or a ring buffer method.

### Media Write Options

```
[N] Normal logging mode. Store data up to media capacity and stop
*[R] Ring buffer mode. Store the latest data, discard the oldest
: :
*[M] Use maximum media storage space available for ring buffer
<U> User defined maximum ring buffer storage space
<Esc>
?
```

If you chose the ring buffer method, you can allocate all of the space available on any inserted media card as the ring buffer or you can define your own total ring buffer size instead. The total storage size you define is held in the AntiLog non-volatile settings store, not on the media itself so you can use media cards with different capacities knowing you have the same settings for each recording session. If you have defined a ring buffer size which is higher than the current inserted media size then the maximum size available on the inserted media will be used instead.

To enter your own total ring buffer storage size, select the <U> item and you will be prompted to enter a value in Mbytes.

Enter the total storage size to use for a new ring buffer in MBytes.  
Range 1 to 4096. (Available size on inserted media is 983MB) :

Please note that if a media card has already been used for ring buffer storage and you are about to append some data to the store then the size *already allocated on the card* is used to add another session. If you need the AntiLog unit settings applied instead then you will need to use the 'Erase all recorded data' item in the 'Recording Options' menu to start a new ring buffer with your desired settings.

Internally, AntiLog uses a special block overwrite algorithm to implement the ring buffer. When you define the amount of media to be used for the ring buffer, AntiLog divides this space into four blocks. Data is written into these blocks in turn until the maximum capacity defined by the ring buffer size is exceeded. At this point, AntiLog will delete and overwrite data that appears in the first allocated block, then the second, third, etc. In this way, AntiLog will always have at least three out of the four blocks of recorded data available for replay. As an example, if you define the total ring buffer media size to be 4MByte, then at least 3MByte or more of data will be available for replay when you have recorded 3 or more MByte of data.



Figure 1: Ring buffer block filling during record

The major advantage to this block overwrite ring buffer method is that you can record data as you normally would including support for multiple sessions, time stamping, sessions with completely different settings, etc. The disadvantage is that some space (i.e. the empty part of the block that is being written to) is not available at all times so you can only guarantee the storage capacity of three out of the four ring blocks at any one instant.

There are no options to select for playing back data from a ring buffer store. Playback is completely automatic from a normal store or ring buffer store and data will always appear in the order it was recorded.

## 6 Playback mode from hardware pin state

For OEM customers that have the 'P' hardware option installed, there is a new feature to allow units to automatically power on in playback mode rather than the default record mode when power is applied to the unit. If the 'EventIN' pin is pulled low when power is applied (and this feature is enabled in the menu system) then the unit will start in the playback mode.

There is a new '<W> Power Management Options' item in the 'General Options' menu which allows you to change power settings.

```
General Options
(Data transfer and 'On' button aware)

<T> System time and date options
: :
*[P] Menu system on playback port settings
<U> Menu system on user defined port settings
[Q] Menu is not displayed until key press (Quiet)
: :
*[D] Dual serial port operation
*[E] Keypad two button hold ERASE enabled
: :
<M> Media data recovery
<W> Power Management Options
<!> Perform embedded software upgrade
: :
<R> Reset current user options to factory defaults
<O> User option management
```

```
: :  
<S> Start playback now (or use 'On' button)  
<Esc>  
?
```

The Power Management Options menu allows the automatic power saving mode to be enabled (default) and disabled and also allows the 'EventIN' line to be used during power up.

```
Power Management Options  
(Data transfer and 'On' button aware)  
  
*[A] Automatic power saving enabled  
*[P] Setting OEM line 'EventIn' low forces Playback Mode at start up  
: :  
<Esc>  
?
```